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EWG testimony to the CPSC September 14, 2017

Comments by EWG Senior Analyst, Sonya Lunder, regarding the Organohalogen Flame Retardants Petition

My name is Sonya Lunder and I am a senior analyst at the Environmental Working Group, a nonprofit, research and advocacy organization dedicated to protecting human health and the environment. As a core part of our mission, EWG works to inform the public about potential hazards posed by harmful chemicals in food, drinking water and consumer products. Our educational materials reach millions of Americans.

Over the past 14 years EWG has performed original studies to document the extent of human exposure to organohalogen flame retardants. We have collaborated with academic laboratories to measure PBDEs, a type of brominated flame retardant, in paired serum samples from toddlers and their mothers,¹ in mothers' milk, umbilical cord blood, household dust, and fish caught for subsistence by individuals and families.^{2,3,4,5,6} More recently, EWG worked together with Duke University researchers to measure metabolites of chlorinated Tris and Firemaster 550™ flame retardants in preschool age children and their mothers.^{7,8} Our studies suggest widespread exposure to unnecessary and toxic flame retardants, particularly during pregnancy, infancy and early childhood.

EWG strongly supports the petition to ban four general categories of consumer products whenever they contain organohalogen flame retardants in additive form. These categories include children's products, mattresses, upholstered furniture and electronics casings. EWG submitted comments supporting the organohalogen product ban in 2016 and now joins the petitioners, Consumer Federation of America and Earthjustice, in disputing the recommendation by Consumer Product Safety Commission staff to deny the petition, as detailed below.

1. Flame retardants continue to pose serious health concerns

A large body of research has documented the health harm from bromine- and chlorine-containing flame retardants, also known as organohalogen flame retardants (OFRs), which have been widely used in home furnishings and electronics for decades.

In its briefing package, the CPSC staff recommended that the Commission deny the petition based on insufficient toxicity data for the class. Yet, such data are in fact available, as outlined in the 2015 petition. Furthermore, since the petition was submitted in 2015, dozens of new studies have documented the environmental persistence of these



chemicals, widespread human exposure, and the health risks organohalogens pose to people.

For example, PBDEs are detected in nearly every American. A systematic review published in August 2017 examined 15 studies of PBDE exposure and neurodevelopmental disorders, and found sufficient evidence that developmental PBDE exposure impacted childhood IQ.⁹ While the Environmental Protection Agency had negotiated a phase-out of PBDEs from production in the United States in 2003, the Agency proposed but did not finalize restrictions against the import of PBDE-containing articles. As a result, PBDEs are still found in products sold in the United States.¹⁰

Additionally, the 2015 petition documents a clear pattern of “regrettable substitution” where restrictions on specific organohalogen flame retardants have repeatedly resulted in a substitution with new, poorly studied halogenated alternatives.

Restrictions on PBDEs have also led to greater use of chlorinated Tris as a replacement flame retardant in consumer products. Scientists recently reported a dramatic increase in one form of Tris (TDICPP) in Americans between the mid-2000s and 2015.¹¹ Human exposure and toxicity concerns have lead four states – Maryland, New York, Vermont and Washington – to ban two forms of Tris, TDCPP and TCEP, in foam products.¹² Without clear federal action to restrict organohalogen flame retardants as a group, the market would likely shift toward newer, poorly studied halogenated chemicals, perpetuating the cycle of regrettable substitution.

2. Organohalogen flame retardants have qualities that make them hazardous to human health

CPSC staff contend that the variable chemical structures and toxicological impacts of the organohalogen flame retardants preclude the Commission from taking action to ban organohalogens as a group. It is true that bromine- and chlorine-containing flame retardants are a diverse group from a structural and chemical perspective. Yet, every one of the 10 halogenated flame retardants the EPA examined in its 2015 assessment of replacement options for polyurethane foam was rated “high hazard” in at least one category for either human health effects and/or environmental impact, such as persistence or bioaccumulation.¹³ The addition of halogens to large organic molecules also increases the capacity to form harmful dioxin- and furan-like compounds during incineration.

Moreover, organohalogen flame retardants share physical and chemical qualities that warrant their consideration as a group under the Federal Hazardous Substance Act, legislation that gives the CPSC authority to ban certain products. The halogen-carbon bond, which imparts thermal stability, also results in persistence and longevity of these chemicals in the environment and contributes to their toxicity to human health.



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An interdisciplinary team of researchers based at the University of Toronto recently reviewed 94 novel flame retardants that could be used as substitutes for consumer products, and found that 40 percent had medium or high concern for potential environmental persistence.¹⁴ The researchers called for replacement flame retardants to be evaluated as a class stating that the “one-by-one regulatory approach is problematic for ensuring that alternative FRs ... will be less hazardous than their predecessors.”

3. Flame retardants can be safely removed from consumer products, a change that must happen with federal action

The addition of chemical flame retardants to consumer products has not been proven to improve public safety. California’s updated furniture flammability rules can achieve fire safety without the addition of flame retardant chemicals to polyurethane foam.¹⁵ Many manufacturers are voluntarily removing these chemicals from foam and electronic products.

Some states have already adopted laws to prohibit the use of chemical flame retardants in upholstered furniture and/or children’s products, yet 22 percent of the children’s products examined by CPSC researchers **still contain** organohalogen flame retardants. Federal action is urgently needed to protect all children in the U.S. from these harmful chemicals.

Forward-looking manufacturers who care about transparency and heed the interests of their customers can readily source furniture foam and plastic housing free of additive organohalogen flame retardants. Further, handheld X-ray fluorescent (XRF) technology allows for rapid, affordable and noninvasive compliance monitoring, so the Consumer Product Safety Commission would not need to specify that manufacturers submit their products for costly third party analysis.

4. Data gaps shouldn’t impede action

CPSC staff characterize the exposure data to be insufficient to link the four product categories named in the petition as the source OFRs in people. Specifically, the staff concluded that vehicles and contaminated food also contribute to human exposure.

Yet, research has shown that consumer products are the primary source of overall exposure to flame retardants. Together with these comments, we are attaching a publication suggesting that twice as many pounds of PBDEs were added to polyurethane foam in household products compared to vehicles.¹⁶ Flame retardants from household products and vehicles migrate into the environment, and eventually into the food supply.



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Additive bromine- and chlorine-containing flame retardants have been shown to migrate from foam and electronic products into household dust where they can be ingested by residents of the house, especially children. Many studies find an association between contact with flame retardant-containing household products, contamination of household dust, and human exposures to these toxic chemicals.^{17,18,19,20}

5. Voluntary action will not protect consumers from harm

In closing, EWG urges the Commissioners to take decisive action to protect the public, especially children, from exposure to toxic organohalogen flame retardants in everyday products. Despite an encouraging market shift away from additive flame retardants in household products, organohalogen flame retardants continue to be used. Voluntary action by manufacturers, and state-by-state restrictions on individual chemicals are not sufficient to keep these toxic chemicals out of our homes, our food supply and our bodies. We urge the commissioners to grant the petition request and ban organohalogen flame retardants from these four key product categories.

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